

an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls;

(c) the sealed gap consisting of a gaseous material;

(c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

10. A cup assembly having an open end, comprising:

(a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; and (iii) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls;

(b) the sealed gap consisting of a gaseous material;

(c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup

a<sup>1</sup> assembly takes at least about twice the time to reach 70°F compared to a comparable single wall cup when tested by the cup insulation test method.

Sub B<sup>27</sup> 12. A cup assembly having an open end, comprising:

(a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; and (iii) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls;

2 (b) the sealed gap consisting of a gaseous material;

a (c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about twice the time to reach 70°F compared to a comparable single wall cup when tested by the cup insulation test method; and

(e) the dual wall assembly provides sufficient impact strength so that the cup assembly does not crack or break when tested by the drop test method.

13. A cup assembly having an open end, comprising:

(a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall

and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; (iii) the side wall thickness of the inner and outer cups are about 0.05 to about 0.06 inches; and (iv) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls wherein the gap is about 0.06 to about 0.08 inches;

(b) the sealed gap consisting of a gaseous material;

(c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

14. A cup assembly having an open end, comprising:

(a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; (iii) the side wall thickness of the inner and outer cups are about 0.03 to about 0.08 inches; and (iv) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls wherein the sealed gap is about 0.04 to about 0.1 inches;

(b) the sealed gap consisting of a gaseous material;

(c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

15. A cup assembly having an open end, comprising:

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(a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; (iii) a curve region at a bottom outside edge of the outer cup having a thickness greater than the wall thickness of the outer cup and a notch in a curve region at a bottom inside edge of the outer cup; and (iv) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls;

(b) the sealed gap consisting of a gaseous material;

(c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

16. A cup assembly having an open end, comprising:

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- (a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; (iii) a curve region at a bottom outside edge of the outer cup having a thickness greater than the wall thickness of the outer cup and a notch in a curve region at a bottom inside edge of the outer cup wherein the notch has a minor radius of about 0.02 to about 0.06 inches and a major radius of about 0.1 to about 0.3 inches; and (iv) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls; and
- (b) the sealed gap consisting of a gaseous material;
- (c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and
- (d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

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17. A cup assembly having an open end, comprising:

- (a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; (iii) the side wall thickness of the

inner and outer cups are about 0.03 to about 0.08 inches (iv) a curve region at a bottom outside edge of the outer cup having a thickness greater than the wall thickness of the outer cup and a notch in a curve region at a bottom inside edge of the outer cup; and (v) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls wherein the sealed gap is about 0.04 to about 0.1 inches; and

(b) the sealed gap consisting of a gaseous material;

a<sup>2</sup> (c) the cup assembly is a child spill-proof cup that a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

18. A cup assembly having an open end, comprising:

(a) a dual wall cup assembly comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; and (iii) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls;

(b) the sealed gap consisting of a gaseous material;

a<sup>2</sup> (c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an outwardly protruding tip of the spout, and a valve located adjacent to or incorporated into the spout wherein the valve substantially prevents a liquid from leaking out of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

21. A cup assembly having an open end, comprising:

a<sup>3</sup> (a) a dual wall comprising: (i) an outer cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall and the top is open; (ii) an inner cup, consisting of a thermoplastic, with side wall, top and end, the end is closed and sealed by bottom wall; (iii) a curve region at a bottom outside edge of the outer cup having a thickness greater than the wall thickness of the outer cup and a notch in a curve region at a bottom inside edge of the outer cup wherein the notch has a minor radius of about 0.02 to about 0.06 inches and a major radius of about 0.1 to about 0.3 inches; and (iv) the inner cup is configured to be receivable within the outer cup to create a sealed gap between side wall of an inner surface of the outer cup and an outer surface of the inner cup and between the bottom walls

(b) the sealed gap consisting of a gaseous material;

(c) the cup assembly is a child spill-proof cup that has a removably mounting cap thereon, the cap has a spout that projects from one side thereof upwardly, the spout is formed integrally with the cap and includes a front and rear walls that converge to an

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a outwardly protruding tip of the spout; and

(d) the dual wall assembly provides sufficient insulation ability so that the cup assembly takes at least about 100 minutes to reach 70°F.

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